

Appendix C

Procedures

(Revised 11/28/05)

1.0 PROCEDURES – STREETS

1.1 PROCEDURE FOR EXCAVATION IN CITY RIGHT-OF-WAYS

A. Purpose

Local Government must have local procedures to control excavations within the City right-of-way. It is the intent of this policy to assure that these procedures are followed and that they are followed in an orderly and timely manner.

B. General Requirements

No person, other than an authorized municipal employee, shall excavate within the right-of-way of any street, sidewalk, alley or any other public right-of-way or thoroughfare in the City, for any purpose whatsoever, without first obtaining a permit to do so.

The persons performing the work shall erect such lights, signs, and barricades as necessary to protect the traveling public at all times. Traffic control shall be the responsibility of the unit performing the work and shall comply with all current laws and regulations including but not limited to the Federal Highway Administration's **Manual on UNIFORM TRAFFIC CONTROL DEVICES for streets and highways** (MUTCD) or the **Virginia Work Area Protection Manual**. The unit performing the work shall be responsible for monitoring and maintaining these devices. The City is not responsible for monitoring and maintaining devices for the unit performing the work under the Excavation Permit.

Signs must be installed on site and on equipment with the name of company, contact person, and phone number in case of emergency.

Once the work is complete, the permanent restoration of the work area shall be made within 5 calendar days. If permanent restoration is not performed, the City reserves the right to complete the work at the permit holder's expense. When said completion falls during the time when hot asphalt material is not available, then temporary cold patch material shall be required. Temporary patching shall be in compliance with the temporary patch detail of the City Specifications. All temporary repairs will be marked with the letter "T" in the color code complying with industrial standards for the marking utility. Once hot asphalt is available, all temporary cold patch material shall be removed and replaced with a permanent hot asphalt patch repair per City standards within 30 calendar days.

When sidewalk is removed and replaced, the entire sidewalk slab section shall be replaced between joints. Portland cement concrete curb and combined curb and gutter shall be replaced between transverse joints.

Any work in the roadway where the road is to be open to traffic or reopened to traffic at the end of each work day, it shall be the applicant's responsibility to make the area safe including all temporary restoration as may be required. Monitoring of this work for safety is also the responsibility of the applicant. Minor repairs outside the street traveled way will not require temporary restoration but must be covered or otherwise properly secured to prevent injury to anyone traveling along the street right-of-way. Warning signs shall be conspicuously placed around the excavation.

During the months of December, January, February, and March, permittee shall be responsible for monitoring the weather and preparing the area for snow removal operations prior to an inclement weather event. Permittee shall bear all costs associated with damages resulting from failure to comply with any and all requirements set forth in this procedure.

Refer to the Manual of Specifications and Standard Details for the City of Lynchburg for applicable specifications and details regarding cutting and removal of existing concrete and pavement, installing sidewalks and handicap ramps, backfilling, compaction, seeding, pavement repairs, and etc.

All work performed shall be in accordance with all applicable Federal, State and Local laws and regulations. The permittee is required to take preconstruction photographs of the project site. The photographs shall be released to the City prior to final inspection of the project.

For further information, see Chapter 35, Article III – Excavations of the City of Lynchburg Municipal Code, and Appendix D – Permits of this specification.

If the City Engineer approves the work as stated in the application for a permit required by the provisions of this procedure and Chapter 35, Article III – *Excavations* of the City of Lynchburg Municipal Code, he shall issue such permit.

If the City Engineer shall not approve for any reason the proposed work for which a permit is required under the provisions of this article (for example, because of the location, materials used, construction practices, etc.), he shall return the application and deposit to the applicant. If the applicant is aggrieved by the action of the City Engineer, he may appeal the same to the Public Works Director. The decision of Public Works Director shall be final.

Public Utility/Service Companies:

Public utility and public service corporations which have been granted the privilege to operate in the streets of the City shall obtain an excavation permit 30 days in advance for all preplanned work and within 24 hours of starting emergency work, unless such emergency work occurs during weekends or normal City holidays, in which case the permit shall be obtained during the next work day. Public utility and public service corporations and their subcontractors, independent contractors, and any other entity, which performs any work under the terms of this article, shall meet any bonding requirements set forth in the franchise granted by the City to the public utility or public service corporation. Public utility and public service corporations and their subcontractors, independent contractors, and any other entity which performs any work under the terms of this procedure shall provide proof of liability insurances satisfactory to the City Attorney.

C. Specific Requirements**1. Historic Requirements:**

In historical areas, there are many features that define the overall character of the district; these include streets, alleys, paving, and sidewalks (you can find the maps at the City of Lynchburg website, www.lynchburgva.gov. Once at the website, click on the following links: Departments, Planning, Navigation, Overlay Districts, and Historic Districts). All street work improvement or modifications shall be compatible with the character of existing areas to contribute to the districts' continuity. When excavating in streets in historical areas, care shall be taken to protect the historical significance material from damage during removal. This material shall be preserved and used in restoration of the excavation. Any and all material of historical significance not used in restoration of work shall be returned to the City for storage. The material shall be sorted, cleaned, and placed by the unit performing the excavation in area designated by the City. Contact Streets Engineer for storage requirements. The following criteria are set as a minimum goal for these historical areas:

Street Paving or Patching – Should be consistent with historically relevant material to the degree possible. Every effort should be made to retain the existing unaltered historic paving material. Where streets have Belgium Block, Brick, or Cobble exposed or covered with asphalt, the material shall be restored to its original contour using like materials.

In historical areas where asphalt covers the historically relevant material, it shall be restored to its original condition and the patch above the historically relevant material filled with asphalt to existing street surface, tack coat will be used on the edges but not on the historic material (see **Standard Detail 25.21**).

Sidewalk – Paving should be consistent with historically relevant material to the degree possible. Every effort should be made to retain the existing, unaltered surfaces, whether it be through maintenance, repairs or resetting as necessary.

Curbs – Should be consistent with historically relevant material to the degree possible. Every effort should be made to retain the existing historically used curbs, whether through maintenance, repair, or resetting as necessary.

2. Permit Application Requirements:

Any person desiring an excavation permit required by the provisions of this procedure shall make written application therefore with the City Engineer on forms supplied by him. Each individual excavation or work area will require an individual permit.

The permit can either be obtained at the office of the City Engineer, Second Floor, City Hall of Lynchburg, VA or at the public services building, 1700 Memorial Ave., Lynchburg, VA.

3. Inspection Fees/Deposits:

Before any excavation permit is issued, the applicant shall deposit with the City an inspection fee in the amount of \$25 for each permit applicable to an area not exceeding 10 square feet plus \$0.50 for each square foot in excess thereof (Note: These fees are subject to annual review and revision by the City Council). If, in the opinion of the City Engineer, an excavation permit requires more than the usual routine administrative and inspection time, the utility shall be billed for all costs associated with this permit at a cost plus an overhead rate.

To ensure the restoration of the excavated area (for a minimum of 1 year), the applicant shall also submit a bond, certified check, or other method of surety as approved by the City Attorney. The amount of said bond, certified check, or surety shall be determined by the City Engineer or such other person or persons as the City may from time to time designate.

1.2 DRIVEWAY ENTRANCE PROCEDURE

A. Purpose

Local Government must have local procedures to control curb cuts for driveway entrances within the City right-of-way. It is the intent of this policy to assure that these procedures are followed and that they are followed in an orderly and timely manner.

B. General Requirements

No one, other than an authorized municipal employee, may cut or excavate to install a driveway within the City right-of-way without a driveway permit issued by the office of the City Engineer. The driveway permit will outline any special conditions required by the City Engineer (or his designated representative).

The persons performing the work shall erect such lights, signs, and barricades as necessary to protect the traveling public at all times. Traffic control shall be the responsibility of the unit performing the work and shall comply with all current laws and regulations including but not limited to the Federal Highway Administration's ***Manual on UNIFORM TRAFFIC CONTROL DEVICES for streets and highways*** (MUTCD) or the ***Virginia Work Area Protection Manual***. The unit performing the work shall be responsible for monitoring and maintaining these devices. The City is not responsible for monitoring and maintaining devices for the unit performing the work under the Driveway Permit.

Signs must be installed on site and on equipment with the name of company, contact person, and phone number in case of emergency.

Once the driveway entrance is installed, the permanent restoration of the work, including striping forms, backfilling, seeding, and pavement repairs shall be made within 5 calendar days. If restoration is not performed, the City reserves the right to complete the work at the permit holder's expense. When said completion falls during the time when hot asphalt material is not available, then temporary cold patch material shall be required. Temporary patching shall be in compliance with the temporary patch detail of the City specifications. All temporary repairs will be marked with the letter "T" in the color code complying with industrial standards for the marking utility. Once hot asphalt is available, all temporary cold patch material shall be removed and replaced with a permanent hot asphalt patch repair per City standards within 30 calendar days.

When sidewalk is removed and replaced, the entire sidewalk slab section shall be replaced between joints. Portland cement concrete curb and combined curb and gutter shall be replaced between transverse joints.

Any work in the roadway where the road is to be open to traffic or reopened to traffic at the end of each work day, it shall be the applicant's responsibility to make the area safe including all temporary restoration as may be required. Monitoring of this work for safety is also the responsibility of the applicant. Minor repairs outside the street traveled way will not require temporary restoration but must be covered or otherwise properly secured to prevent injury to anyone traveling along the street right-of-way. Warning signs shall be conspicuously placed around the excavation.

During the months of December, January, February, and March, permittee shall be responsible for monitoring the weather and preparing the area for snow removal operations prior to an inclement weather event. Permittee shall bear all costs associated with damages resulting from failure to comply with any and all requirements set forth in this policy.

Refer to the Manual of Specifications and Standard Details for the City of Lynchburg for applicable specifications and details regarding cutting and removal of existing concrete and pavement, installing driveway entrance, sidewalk and handicap ramps, backfilling, compaction, seeding, pavement repairs, and etc.

All work performed shall be in accordance with all applicable Federal, State and Local laws and regulations. The permittee is required to take preconstruction photographs of the project site. The photographs shall be released to the City prior to final inspection of the project.

Any deviations from this policy will be addressed through the permitting process.

See Article II – Driveways, Chapter 35 (35-34 to 35-41) of the City of Lynchburg Municipal Code for more information.

C. Specific Requirements

1. Permit Application Requirements:

Any person desiring an excavation permit required by the provisions of this procedure shall make written application therefore with the City Engineer on forms supplied by him. Each individual excavation or work area will require an individual permit.

The permit can either be obtained at the office of the City Engineer, Second Floor, City Hall of Lynchburg, VA or at the public services building, 1700 Memorial Ave., Lynchburg, VA.

2. Inspection Fees/Deposits:

No fee for Driveway Permit

1.3 ROLL TOP CURB PROCEDURE

A. Purpose

Whenever the use of roll top curb is requested it is subject to the approval of the City Engineer.

B. General Requirements

1. The road design must adhere to the City of Lynchburg Manual of Specifications and Standard Details.
2. The sidewalk shall be 7 inches thick for the entire length of the sidewalk along streets with roll top curb.
3. The engineer shall submit gutter flow calculations and inlet calculations per VDOT standards. (Technical Supplement TS-98-1) The spread shall be limited to ½ lane width.

C. Specific Requirements

1. Should the use of roll top curb be desired for a new or existing residential street, the street must meet all of the following requirements:
 - A. The ADT (Average Daily Traffic) must be less than or equal to 1000.
 - B. The speed limit must be less than or equal to 35 mph.
 - C. The adjacent lot widths must be less than or equal to 65 feet.
2. For new development along an existing street which has standard curb and gutter (**Standard Detail 25.04**), the use of roll top curb will not be permitted unless all of the following conditions are met:
 - A. The new development is located at the end of the existing street,
 - B. The street/street extension will dead end within the development, and
 - C. The street will not be extended for future development or be used as an arterial or collector street.
3. Where a new street with roll top curb intersects an existing street with standard curb and gutter (**Standard Detail 25.04**), the radii of the intersection shall have standard curb and gutter with a smooth transition to roll top curb along the new street.

1.4 DRIVEWAY PIPE PROCEDURE

A. Purpose

This Streets Procedure only applies to residential driveway pipes and extensions. Whenever a property owner wishes to construct a residential driveway entrance within the City right-of-way, he/she shall obtain a driveway permit. When the driveway entrance is installed over a ditch, swell, or in a manner that interferes with the natural flow of surface water, then the property owner shall install a driveway pipe. Whenever a property owner wishes to extend a pipe within the City right-of-way, he/she shall obtain prior approval from the Streets Engineer. In both cases, the property owner shall purchase driveway pipe from the City of Lynchburg, or approved equal, and the City shall install the pipe at its own expense. Following is the procedure used by the Division of Streets and Traffic Maintenance for the purchasing and installation of such pipe.

B. General Requirements

1. **Driveway Permits:** A driveway permit is required for a driveway entrance in accordance with Paragraph 35-35 of Chapter 35 of the City Code. An application may be obtained at City Hall: Engineering Division (2nd floor) 900 Church Street, Lynchburg, VA 24504. A driveway permit is not required to extend a pipe, but prior approval from the Streets Engineer shall be required before any extension is made.
2. **Type of Pipe:** The City requires Reinforced Concrete Pipe (RCP) to be installed under areas that will be subject to traffic loads, and Plain Concrete Pipe (PCP) to be installed under all areas that are not subject to traffic loads.
3. **Size of Pipe:** The diameter and length of pipe shall be specified by the Streets Engineer. The minimum diameter of pipe is 15 inches.
4. Minimum cover requirements shall be approved by the Streets Engineer prior to the start of construction.

C. Specific Requirements

1. **Purchasing of Pipe:** The property owner must purchase the pipe at his/her own expense in accordance with Paragraph 35-38 of Chapter 35 of the City Code. The City maintains a quantity of pipe that may be purchased by the citizen, thus reducing delivery costs. However, the citizen may purchase the pipe elsewhere provided it complies with the above stated City standards for driveway and extension pipe, and the citizen shall notify the Streets Engineer when the pipe is delivered. If the pipe is purchased from the City, the property owner will be sent a registered bill for the cost of pipe and all applicable materials once the work has been completed.

2. **Installation of Pipe:** For driveway pipe, the City shall install the pipe at its expense and provide four inches of VDOT 21A, crush run stone. Additional cover shall be provided by the property owner at their expense to meet minimum cover requirements. For extension of pipe, the City shall install the pipe at its expense and cover the pipe with the amount of dirt obtained on-site from installing the pipe. Any additional dirt shall be paid for or provided by the property owner at their expense.
3. **Replacing Existing Pipe:** The property owner shall be responsible for replacing the existing pipe if the Streets Division deems it necessary when extending the existing pipe. If the property owner has a driveway pipe that is anything other than Reinforced Concrete Pipe or if the existing pipe is damaged, then the entire pipe must be replaced rather than just extending it. When replacing the existing driveway pipe, the property owner shall be billed for any material, such as asphalt or concrete, required to patch the driveway in which the pipe is being replaced. If the City is unable to perform the patch then the property owner will be responsible for acquiring a contractor to perform the patch.
4. **Easements:** If the City does not have an established easement in the location where the property owner would like to extend the pipe, then the property owner is responsible for granting the City an easement. No work shall be performed until the easement is granted or the property owner signs a form stating that he/she will grant an easement to the City once the work is complete.

The plat has to be submitted to the City Engineer for approval and signature. The property owner shall be responsible for recording the plat within 60 days of approval of the plat by the City Engineer.

2.0 PROCEDURES – UTILITIES

2.1 FIRE FLOW TESTING PROCEDURE

A. Purpose

Any contractor or engineer requiring water flow and pressure data for the design or evaluation of fire suppression systems shall contact the City of Lynchburg, Utilities Division to schedule a fire flow test.

B. General Requirements

None

C. Specific Requirements

Fire flow test shall be scheduled at least 48 hours in advance and the contractor/engineer shall supply all gauges and equipment necessary for the test.

The Utilities Division will furnish relevant information as to water main size, pressure zone, pump status, ect.

The Utilities Division shall be responsible for operating all fire hydrants during the test.

Tests required by insurance carriers shall follow this procedure.

2.2 WATER & SEWER SERVICE PROCEDURE

A. Purpose

The purpose of this procedure is to insure that all connections to the City of Lynchburg's utility systems and extensions of these systems are (performed) installed in a uniform and acceptable manner.

B. General Requirements

1. Connections

All connections to the City of Lynchburg's utility systems must be approved by the City Engineer. Installation of all utilities shall be by City forces or by a licensed utility contractor. The installation of all utilities shall not begin until all appropriate state and local permits have been obtained. Inspections shall be performed by the City Engineer or any of his duly qualified representatives or by contract to duly qualified private inspectors.

Individual meters and connections are required for the following usages:

- 1) Single-Family Residential Homes
- 2) Detached Dwellings
- 3) Duplexes
- 4) Churches

Master meters and services are required for the following usages:

- 1) Shopping Centers
- 2) Townhomes/Condominiums
- 3) Multiple Institutional/ Industrial/Commercial buildings on a single lot
- 4) Apartment Complexes

2. Main Extensions

The City recognizes its basic responsibility to provide water and sewer service to all developed properties within the corporate limits and to extend its service lines to all such properties unless it is unreasonable to do so. Service will be provided on a non-discriminatory basis and subject to the availability of funds.

The City may determine that an extension of service is unreasonable for the following reasons:

- A. The cost of the extension is excessive in terms of the number of customers to be served or because of topographical, engineering, technical, or other issues.
- B. The provision of service will adversely affect the supply of water to other customers or will adversely affect the City's sewage collection and treatment capabilities.
- C. Other good and sufficient reasons.

C. Specific Requirements

1. Extensions of Service to Developed Residential Properties within the City

Extension Guidelines: The following is a list of the normal steps that a water or sewer line extension request must follow:

- A. An interested property owner contacts the City Public Works Engineering Office and requests a sewer or water line extension to the property.
- B. The property owner is given a petition along with general information concerning the particular extension.
- C. The property owner is requested to circulate this petition among the identified affected property owners in the area to determine who is interested in participating in the extension. The petition includes a list of those property owners that could potentially be served by the proposed extension.
- D. After the petition has been circulated and all property owners that are interested in participating in the extension have signed said petition, the original interested property owner must return the petition to the City Public Works Engineering Office.
- E. The Public Works Engineering Office will review said petition to first determine if 50 percent of the potential customers have signed the petition. If 50 percent participation is not achieved, the petition process stops here. The property owner may contact the City Engineer for other options concerning the extension. At this point any further action must go before the Physical Development Committee for special consideration.
- F. The City Public Works Engineering Office will then contact all property owners who have signed the petition to verify that they fully understand their commitment and still intend to participate in the extension. The Office will also contact all property owners who have not signed the petition to verify that they were contacted and to offer a final opportunity to sign the petition if they so desire.
- G. The petition is then presented to City Council's Physical Development Committee, which is comprised of three members of City Council.
- H. If the extension petition is approved by City Council, the Engineering Office will develop plans for the extension and the City's Right-of-Way Agent will obtain any necessary easements across private property.

- I. Petitioning property owners are then sent a registered bill for availability and connections fees in accordance with City Code, Sections 34 and 39. Availability and connection fees may either be paid by lump sum or by an installment agreement in accordance with City Code, Sections 34 and 39.
- J. Once all registered bills have been paid or payment installment agreements made and all easements are obtained, the project will be scheduled for construction.
- K. When the construction is completed, the property owners who petitioned and paid for the sewer extension must make application for service in the Map Room, Second Floor, City Hall, prior to connecting to the extension.
- L. It is the property owner's responsibility to acquire the services of a licensed plumber to install the piping from the City installed cleanout to the residence and to obtain a plumbing permit from the City's Building Inspection Division.

2. Extensions of Service to Property outside the City

Requests for extensions of the City's water and sewer systems outside the corporate limits of the City shall be made to the appropriate governing service authority. The City will then negotiate with that authority.

3. Extensions of Service to Undeveloped Property within the City

- A. **Subdivisions:** Extensions shall be per Chapter 24 of the City Code. If the City Engineer requires lines within a subdivision or other new development to be a larger size than those necessary to serve the project and are so located to serve other properties, the developer will be reimbursed the difference between the minimum size needed and the size required by the City.
- B. **Residential Parcels:** Extensions shall be per Chapters 34 and 39 of the City Code.
- C. **Commercial Property:** Extensions shall be per Chapters 34 and 39 of the City Code.

4. Miscellaneous Requirements for all Extensions

- A. All extensions to the City's water and sewer systems shall be installed in accordance with the provisions of this policy as well as the latest revision of the City of Lynchburg Manual of Specifications and Standard Details and Design Modules.

- B. No construction or modification to the City's water and sewer systems shall commence until detailed plans stamped and signed by a licensed professional engineer have been reviewed and approved by the City Engineer and the Utilities Engineer. Such plans shall include whatever information the City Engineer deems is reasonably necessary.
- C. All construction shall be inspected and accepted by a City Construction Coordinator. See specifications for details.
- D. To preserve road surfaces, whenever the City installs water or sewer line extensions in paved streets, the City may install lateral service lines to serve all undeveloped as well as developed properties along the project area.

Water lines shall be extended only within the right-of-way of publicly opened streets, except upon prior approval of the City. Sewer lines shall also be located within such rights-of-ways, except where topography renders this impracticable. However, in no case will the City extend lines across private property, unless the City has obtained adequate permanent easements for such lines.

2.3 BACKFLOW PREVENTER PROGRAM PROCEDURE

A. Purpose

The City of Lynchburg Department of Public Works, Utilities Division is responsible for providing water and wastewater service to the customers of the City of Lynchburg. It is our obligation to insure the health, safety and welfare of our customers by making a continuous effort to provide quality services. The focus of this document is to assure the protection of water quality through the water distribution system to our customers.

Water suppliers must identify potential cross-connection hazards and determine necessary protective measures to maintain water quality. This can be accomplished through the Cross-Connection and Backflow Prevention Program. The program identifies those activities which pose a threat to the public water supply through cross-connections and outlines appropriate protective measures.

It is the purpose of this document to communicate the requirements of this program for protecting our water supply. If you have any questions concerning the Cross-Connection Control and Backflow Prevention, please contact the City of Lynchburg's Cross-Connection Coordinator.

B. General Requirements

When a degree of hazard has been determined and the property classified, effective steps shall be taken to require correction of the condition or the installation of a backflow prevention device.

1. An air gap separation or an approved reduced pressure zone (RPZ) backflow prevention device shall be installed where contamination hazards are found or potentially exist. Examples of such facilities would be hospitals, funeral homes, veterinary clinics, car washes, chemical plants, etc.
2. An approved double check valve (DCV) backflow prevention device shall be installed where pollution hazards are found or potentially exist. An example would be a fire service system. Fire service systems where chemicals are added, such as antifreeze or foaming agents, shall be equipped with a RPZ.
3. Pressure type vacuum breakers (PVB) shall be installed on bottom fed tanks and vessels. Pressure type vacuum breakers are often installed on lawn irrigation/sprinkler systems. This device must be installed 12" (1 foot) above the highest sprinkler head.
4. Hose bibb vacuum breakers shall be installed on all threaded hose bibbs. Trucks using portable hydrant meters shall be equipped with an approved air gap arrangement or provide a RPZ backflow prevention device on the fill line.

5. **Required Installations:** An approved backflow prevention device shall be installed on each service line to a consumer's water system serving, but not necessarily limited to, the following types of facilities:
- a) Hospitals, mortuaries, clinics, veterinary clinics, nursing homes and medical buildings.
 - b) Laboratories
 - c) Piers, docks, water front facilities
 - d) Sewage treatment plants, sewage and storm water pumping stations
 - e) Food, beverage processing plants
 - f) Chemical plants, dyeing plants, and pharmaceutical plants
 - g) Metal plating industries
 - h) Petroleum or natural gas processing and storage plants
 - i) Fire systems
 - j) Car washes and laundries
 - k) Lawn sprinkler systems
 - l) Slaughter and poultry processing plants
 - m) Commercial greenhouses
 - n) Paper products plants and printing plants
 - o) Pesticide and exterminating companies
 - p) Schools and colleges
 - q) High-rise buildings (4 or more floors)
 - r) Multi-use commercial, office or warehouse facilities
 - s) Others specified by the Director of Utilities when reasonable cause can be shown for a potential cross-connection or backflow hazard.

C. Specific Requirements

1. Inspections will be scheduled in priority according to known degree of hazard associated with the type of customer being served. Services with a high degree of hazard will be inspected first. Others shall come in order.

Residential customers will be informed of potential cross-connections in and around the home through educational brochures and other information sent periodically in utility bills.

2. Inspections and tests on backflow prevention devices that are required and installed shall be made annually. Tests shall be performed by a certified tester. Devices should be repaired, overhauled or replaced as required by the Department of Public Works, Utilities Division. Overhaul intervals should be by the manufacturer's recommendations.
3. Certified test results shall be furnished to the Department of Public Works, Utilities Division and the results will be maintained on file for a period of five (5) years.
4. Certified testers must furnish proof of certification to the Utilities Division including certifying agency and expiration of certification.
5. Testing procedures shall be in accordance with the manufacturer's instruction and approved by the Department of Public Works, Utilities Division.
6. Prior to construction and issuance of any building permits, site plans must be submitted to the Technical Review Committee and approved by the Department of Public Works, Utilities Division.
7. The location of any backflow prevention device shall be shown on the site plan.
8. Existing plumbing from the building to the connection and/or water meter must be shown. Proposed plumbing from the building to the connection must be shown.
9. When the site plan reflects the installation of a backflow prevention device, such devices shall be of an approved type and shall be tested by a recognized testing laboratory or agency and be approved by the Department of Public Works, Utilities Division.
10. The Department of Public Works, Utilities Division shall review the plans and advise whether they are approved or disapproved. If disapproved, the Department of Public Works, Utilities Division will advise what will be approved. The revised plan shall be resubmitted for additional review.
11. If an underground irrigation system is proposed, the site plan must show the proposed water line tie-in and the location of the pressure type vacuum breaker (PVB) or reduced pressure zone (RPZ) backflow device.
12. If an underground fire system is proposed, the site plan must show the proposed water line tie-in and the proposed location of the reduced pressure principle backflow prevention assembly.

D. Fire System Service Requirements

1. All fire sprinkler system services will be equipped with an approved reduced pressure principle backflow prevention assembly to ensure protection of the City water supply from contamination. The Utilities Division maintenance responsibilities end at the City right-of-way line. The assembly, valves, and fire department connection shall be maintained by the property owner.
2. The Department of Public Works, Utilities Division will perform plan review of the proposed water line connection up to the City right-of-way line.
3. The Building Official will review from the City right-of-way line to the building including the backflow prevention device assembly. A separate plan submission is required for the Building Official's approval.
4. The location will be reviewed by both the Department of Public Works, Utilities Division and the Building Official for optimum placement. The review of the site plan is not a detailed review of the water and sewer design when it involves the relocation and/or extension of the City system. However, the site plan (applicable sheets of the site plan) must reflect the approved water and sewer design and show the exact location of the existing facilities. It is important that the Engineer submit utilities plans directly to the Technical Review Committee at the same time or near that time to avoid unnecessary delays in the approval of the site plan and the release of the building permit.
5. Installation of backflow prevention device assemblies other than at the property line must be approved by the Utilities Division and the Building Official. In these instances a gate valve will be installed at the property line and/or edge of the water line easement to designate the point at which the Utilities Division's responsibility ends.
6. When a Siamese connection is required, it will be installed on the outlet side of the backflow prevention device assembly.

E. Variances

Developers/Consultants may request a variance from the BFP device placement (location) requirement. This request must be made in writing and sent to Director of Utilities, City of Lynchburg, 525 Taylor Street, Lynchburg, Virginia 24501. Copies should also be sent to the City Engineer and Principal Engineer at City of Lynchburg, Public Works- Engineering, City Hall-2nd Floor, 900 Church Street, Lynchburg, Virginia 24504.

2.4 SERVICE CONNECTION & VAULT PROCEDURE

A. Domestic Services ¾" through 2"

The City will make an appropriate size tap to the existing water main and install the copper service pipe from the tap to the meter box. The City will install the meter box at the right of way or easement line. In locations where a public sidewalk exists the meter box will be installed in the sidewalk. The meter assembly and meter will be furnished and installed by the City, including a pigtail on the property owner's side of the meter. The pigtail shall extend approximately 18" beyond the meter box and shall be used for the owner to connect to the service. The City's maintenance responsibility for the service shall end at the end of the pigtail.

B. Domestic Services 3" and Larger

The City will make an appropriate size tap/connection to the existing water main and install ductile iron pipe to the approximate location of the proposed vault. The property owner shall have the vault constructed to City standards including the by-pass line around the vault and piping inside the vault. The City shall inspect all pipe work prior to backfilling. Upon approval of the completed vault installation, the City will assume responsibility for the maintenance of the service line, the by-pass line, the vault and its contents. The City's responsibility shall end at the downstream tee of the by-pass line. The vault and the by-pass line shall be constructed within the street right of way. If there is not enough space to install the vault and by-pass within the right of way, the City shall be granted an easement for any portion of the installation outside of the right of way. The property owner shall be responsible for preparing and recording the easement.

Per City Code Section 39 – 41, services used for domestic or manufacturing purposes must be independent of services used for fire systems.

C. Fire System Service Requirements

1. All fire sprinkler system services will be equipped with an approved reduced pressure principle backflow prevention assembly to ensure protection of the City water supply from contamination. The Utilities Division maintenance responsibilities end at the City right-of-way line. The assembly, valves, and fire department connection shall be maintained by the property owner.
2. The Department of Public Works, Utilities Division will perform plan review of the proposed water line connection up to the City right-of-way line.
3. The Building Official will review from the City right-of-way line to the building including the backflow prevention device assembly. A separate plan submission is required for the Building Official's approval.
4. The location will be reviewed by both the Department of Public Works, Utilities Division and the Building Official for optimum placement. The review of the site plan is not a detailed review of the water and sewer design when it involves the relocation and/or extension of the City system. However, the site plan (applicable sheets of the site plan) must reflect the approved water and sewer design and show the exact location of the existing facilities. It is important that the Engineer submit utilities plans directly to the Technical Review Committee at

the same time or near that time to avoid unnecessary delays in the approval of the site plan and the release of the building permit.

5. Installation of backflow prevention device assemblies other than at the property line must be approved by the Utilities Division and the Building Official. In these instances a gate valve will be installed at the property line and/or edge of the water line easement to designate the point at which the Utilities Division's responsibility ends.
6. When a Siamese connection is required, it will be installed on the outlet side of the backflow prevention device assembly.

3.0 PROCEDURES – MISCELLANEOUS

3.1 REIMBURSEMENT TO DEVELOPER PROCEDURE

A. Purpose

The City provides incentives to developers to offset additional costs associated with developing inside the City. The Engineering Division of Public Works determines the amount of reimbursement owed to a developer upon completion of the project in accordance with City Code and other applicable policies and agreements.

B. General Requirements

Reimbursement Process

1. Following submittal of proposed development plans (road, water, and sewer (RWS) plans) by the Owner for review and approval by City staff, the City Engineering Division will notify the developer, by letter of the plans approval and the City's incentive program.
2. The developer will submit a "Petition for Reimbursement" based on the information in the City's letter. The "Petition" will break down the reimbursement eligible items within the development into standard city pay items as identified in the City Annual Services Contracts and include proposed quantities.
3. The City Engineering Division will evaluate the developer's "Petition" and, if in order, will add the appropriate City costs (Engineering/Inspection/Testing) and present the petition to City Council's Physical Development Committee (PDC) for the approval and authorization of the necessary funds.
4. The City Engineering Division will confirm the decision of the PDC to the developer, by letter. The confirmation letter shall include a list or table of all items and their quantities as approved by the PDC.
5. Upon completion of the development and acceptance of the petitioned items, the developer shall submit a "Request for Reimbursement" for the accepted items. The "Request" will include an itemized list or table of each petitioned item, its proposed quantity, and its actual, installed quantity.
6. The City Engineering Division and City Construction Coordinator will review the "Request" for accuracy. If approved, the "Request" will be processed for payment in accordance with the City Ordinances.

C. Specific Requirements

1. NOTIFICATION FORM LETTER (See attached)
2. CONFIRMATION FORM LETTER (See attached)
3. REIMBURSEMENT TABLE (See attached)

REIMBURSEMENT NOTIFICATION LETTER

DATE

Developer/Consultant
Street
City, State, Zip
ATTN: Project Manager

RE: Development Reimbursement

Dear Sir or Madam:

Your development plans entitled "_____", revised _____, have been approved for construction by the City of Lynchburg Engineering Division. A copy of the approved plans, signed by the City Engineer is attached. In an effort to attract quality developments such as yours, the City of Lynchburg provides reimbursement incentives for the construction of public utilities and roadways. Your development is eligible for reimbursements for the following items in the amounts indicated:

Curb and Gutter	at 50% of the construction cost (up to the City current Annual Services Contract price)
Concrete Sidewalk	at 50% of the construction cost (up to the City current Annual Services Contract price)
Water Service Connections	at 100% of the construction cost (up to the City current Annual Services Contract price)
Sewer Service Connections	at 100% of the construction cost (up to the City current Annual Services Contract price)
Sewer Line to the Boundary of the Subdivision	
Water Line to the Boundary of the Subdivision	
Water Line within the Boundary of the Subdivision	

The attached table breaks down the eligible items into standard City pay items. You should provide the City Engineering Division with a break down of the proposed quantities for each item including your Contractor's cost for each item. Following completion of your project and acceptance of the public amenities, the City Construction Coordinator will determine final quantities of the eligible items. The appropriate dollar amounts will then be assigned for each eligible item. After discounting the reimbursement amount for inspection, testing, and other costs incurred by the City as a result of this project, the amount to be reimbursed will be presented to the City's Physical Development Committee. Once they authorize the necessary funds, a check will be written to you in the amount approved.

Your itemized list of proposed quantities and costs should be sent as soon as possible to:

Director of Engineering
City Hall
900 Church Street
Lynchburg, Virginia 24504

Thank you for your interest in the development of the City of Lynchburg. If you have any questions about the reimbursement process or otherwise need assistance in regard to your project, please feel free to contact me at (434) 455 -3947.

Sincerely,
City of Lynchburg

Director of Engineering

REIMBURSEMENT CONFIRMATION LETTER

DATE

Developer/Consultant
Street
City, State, Zip
ATTN: Project Manager

RE: Development Reimbursement

Dear Sir or Madam:

The City of Lynchburg Engineering Division has received your "Petition for Reimbursement" of eligible items for the project entitled "_____", revised _____. The "Petition" has been presented to the City Council's Physical Development Committee (PDC) for approval. The PDC has approved reimbursement in accordance with Lynchburg City Ordinances for the following items:

<i>Curb and Gutter</i>	<i>at 50% of the construction cost (up to the City current Annual Services Contract price)</i>
<i>Concrete Sidewalk</i>	<i>at 50% of the construction cost (up to the City current Annual Services Contract price)</i>
<i>Water Service Connections</i>	<i>at 100% of the construction cost (up to the City current Annual Services Contract price)</i>
<i>Sewer Service Connections</i>	<i>at 100% of the construction cost (up to the City current Annual Services Contract price)</i>
<i>Sewer Line to the Boundary of the Subdivision</i>	
<i>Water Line to the Boundary of the Subdivision</i>	
<i>Water Line within the Boundary of the Subdivision</i>	

A table outlining the eligible items and proposed quantities (as provided in your petition) is enclosed. Please note that the dollar amount to be reimbursed will be determined by the actual quantity of each eligible item installed and accepted by the City minus any costs incurred by the City (such as inspection) as a result of your project.

Upon completion of your project, you will need to make a request for reimbursement with the City Engineering Division. This request must be in writing and must include the actual quantity of each eligible item installed and accepted. Following the review and approval of your request by the City Engineering Division and the City Construction Coordinator, your request will be processed for payment and a check sent to you for the reimbursement amount minus City costs.

Thank you for your interest in the development of the City of Lynchburg. If I can be of any assistance to you throughout the reimbursement process or otherwise need assistance in regard to your project, please feel free to contact me at (434) 455-3947.

Sincerely,
City of Lynchburg

Director of Engineering

REIMBURSEMENT TABLE

DEVELOPMENT: _____
 OWNER: _____
 CONSULTANT: _____
 CALCULATIONS BY: _____
 CHECKED BY: _____

DATE: _____

TOTAL LENGTH: _____

TOTAL COST: _____

COST/FT: _____

ITEM NO.	DESCRIPTION	UNIT	ACTUAL QUANTITY	PROPOSED QUANTITY	<u>CONTRACTOR</u>		<u>CITY REIMBURSEMENT</u>	
					UNIT COST	TOTAL COST	UNIT COST	TOTAL COST
IA-37	2' Curb and Gutter	L.F.						
IA-41	CG-6 Curb and Gutter	L.F.						
IA-46	Concrete Sidewalk (new – 4" thick)	S.Y.						
IIB-46	8" x 4" PVC Wye	EA.						
IIB-48	4" 1/8 PVC Bend	EA.						
IIB-38	4" PVC Horiz. Pipe (open cut)	L.F.						
IIB-40	4" PVC Cleanout Assembly	EA.						
IIB-41	4" PVC Vert. Pipe	L.F.						
IIA-43	3/4" or 1" Water Service (open cut)	L.F.						
IIA-44	2" Water Service (open cut)	L.F.						
IIA-53	Meter Box and Assembly (3/4" or 1")	EA.						
IIA-54	Meter Box and Assembly (2")	EA.						
	*****TOTAL*****	----	-----	-----	-----	-----	-----	-----

3.2 TRAFFIC STUDY GUIDELINES PROCEDURES

A. Purpose

As traffic increases in the City, it becomes more important that adequate infrastructure is in place to efficiently and safely accommodate traffic generated from new developments. In response to this issue, the City of Lynchburg has made a recent effort to more accurately measure traffic impacts from proposed developments by requiring that developers complete a traffic study showing that traffic from project will not adversely affect the adjacent roadway and intersections. The purpose of this study is to ensure that adequate transportation facilities are available to accommodate the development.

B. General Requirements

All projects that generate over 500 external trips per day (50 peak hour trips) according to the latest version of the Institute of Transportation Engineer's (ITE) Trip Generation Manual are required to do a traffic study. Projects that generate less than 500 external trips may be required to perform a traffic study due to the project's location, adjacent development, and other related factors. The City's Traffic Engineering Department should be contacted to obtain the requirements for the traffic study.

The following summarizes the general methodology for a traffic study. Some studies may require additional information based on the size and location of the project.

C. Specific Requirements

Study Methodology

The applicant's engineer must contact the Traffic Engineering Department before proceeding with the study in order to obtain approval for the methodology. This can be done either in person or via teleconference.

1. Study Area

The study area will encompass also driveway entrances and major intersections located adjacent to the site. For larger developments and for developments that are on roadways with heavy traffic, a link analysis on the adjacent roadways may also be required.

2. Background Traffic

Background traffic at the study intersections will be determined by performing turning movement counts (TMC) for the peak period between 4:00 and 6:00 p.m. For certain uses, it may be determined that the a.m. hour will be the peak hour of traffic. In this case, traffic will be counted during 7:00 to 9:00 a.m. Background traffic on roadway links will be determined using 24-hour tube counts on the roadway. Counts will be performed on a Tuesday, Wednesday, or Thursday and will exclude holidays.

3. Project Traffic Generation and Distribution

Project traffic will be estimated using the latest edition of the ITE Trip Generation Manual. Project traffic will be estimated for the a.m., p.m., and daily peak hours. Pass-by and internal capture should be estimated using information from the ITE Trip Generation Manual and must be approved by Traffic Engineering before either study is submitted. Pass-by capture should only be used for retail uses. Only external trips on the roadway will be considered in the analysis. The traffic study should be done at full build out of the project.

The traffic shall be distributed to the adjacent intersections based on existing travel patterns of the roadway. The distribution must also include any proposed roadways that will be constructed before the opening year of the development. For larger scale developments, the use of a transportation model may be required. If the distribution is known, for example, through employee addresses or school enrollment information, then the known distribution can be used as approved by the City Traffic Engineer.

4. Future Traffic

The analysis year of the study will be the intended opening year of the project. Existing traffic shall be grown to the opening year using growth rates obtained from historical count information. The City will provide the applicant with this information. The grown traffic volumes shall be added to the project traffic to estimate future total traffic.

5. Required Analysis

Both existing and future traffic will be analyzed using the procedures outlined in the latest edition of the Highway Capacity Manual (HCM). Both adjacent signalized and unsignalized intersections impacted by the development shall be analyzed. If applicable, anticipated vehicle queue lengths shall be measured and appropriate vehicle storage lanes estimated. If required in the methodology, roadway segments will also be analyzed using HCM procedures. Acceptable software includes the Highway Capacity Software (HCS), Signal97, or other approved software.

Acceptable improvements to mitigate for traffic impacts from the project include but are not limited to the following:

- Signalization
- Addition of turn lanes
- Lengthening of existing turn lanes
- Widening of existing roadways
- Safety improvements to accommodate project.
- Donation of right-of-way
- Bicycle and pedestrian facilities
- Transit Amenities

6. Prepare Report

A report summarizing the analysis and recommendations shall be prepared. All analysis and calculation sheets shall be included as appendices to the report. Two copies of the draft report and five copies of the final report shall be submitted to the Traffic Engineering Department.

3.3 TRAFFIC CONTROL PLAN SUBMITTAL PROCEDURE

A. Purpose

Any project in which construction is to take place within the right-of-ways of the City of Lynchburg or any project in which construction activities adjacent to City right-of-ways will require partial or complete lane closures be they traveling lanes, turning lanes, acceleration/deceleration lanes, or parking lanes is required to have an approved Traffic Control Plan prior to the commencement of any construction activities.

B. General Requirements

The Traffic Control Plan must conform to the latest revision of the Manual on Uniform Traffic Control Devices (MUTCD) as well as the VDOT *Road and Bridge Specifications* and VDOT *Virginia Work Area Protection Manual*, Standards and Guidelines, latest revisions.

The Contractor is solely responsible for supplying and maintaining until the completion of the project all signs, lights, barricades, flashing directional arrows, flagmen, etc. as required by the approved Traffic Control Plan.

C. Specific Requirements

Plan Submittal and Approval

Submit 3 copies of the proposed traffic control plan to the City Traffic Engineer. The plans shall have a signature line for the approval by the City Traffic Engineer. Upon approval, two signed copies will be returned to the submitter.

3.4 INFRASTRUCTURE INSPECTION AND ACCEPTANCE FOR MAINTENANCE

A. Purpose

The purpose of this procedure is to insure that all construction activities involving the City of Lynchburg's infrastructure systems is performed in accordance with the City of Lynchburg's Manual of Specifications and Standard Details.

B. General Requirements

Easement Required

1. Where possible, all water and sewer mains shall be placed within the right-of-way. When this is impractical, or where, due to depth or slope, additional easements are required, then easements shall be dedicated and recorded on plats prior to acceptance for maintenance. When utilities are located outside the public street rights of way, the developer and his/her Engineer shall verify that the final location of the public utilities is located within a platted easement. The City will verify that the easements shown on the preliminary plat are also duplicated on the final plat.
2. All public easements including (sewer, water, and storm sewer) are to remain clear of obstructions. No building, fences, trees, shrubs or other obstructions shall be placed in any utility easement. Driveways, walkways, asphalt and parking lots may be permitted in easements; however, the City reserves the right to remove such asphalt, concrete, base course and sod as necessary to access its facility in the case of emergency. Pavement or concrete will be replaced with a patch. Sod will be replaced with Fescue or rye seeding. The City will not be responsible for replacing a property owners sod after repairing a utility line.

C. Specific Requirements

Inspections

The following applies to construction of all facilities, utilities, and streets that the City will accept for ownership and permanent maintenance.

1. WATER

- A. The following items must be inspected during and after installation of water mains and appurtenances for compliance with City Specifications and Standard Details:
 - 1) All materials for acceptable make and model in compliance with City of Lynchburg approved products list.
 - 2) All bends, fittings, tees, valves, valve boxes, tapping sleeves and valves, for proper installation, blocking and rodding.

- 3) Fire hydrant installation for proper blocking and rodding, clearance and location, depth, painting and flow.
- 4) All services from corporation to meter box including saddles, for proper installation and connection.
- 5) Vaults, air release valves, vacuum valves, and blowoffs for proper installation.
- 6) New main pressure test including service laterals per Section 02660 – *Water Distribution*.
- 7) Bacteriological test.
- 8) Flushing logs shall be provided to the City's Construction Coordinator for all water flushed including durations and operations of valves and fire hydrants.
- 9) The City's Construction Coordinator must be informed in advance of flushing and testing. The City of Lynchburg shall be the sole operator of all valves and hydrants.

2. SEWER

- A. The following items must be inspected during and after the installation of sewer lines for compliance with City Specifications and Standard Details.
 - 1) All materials for acceptable make and model in compliance with City of Lynchburg approved products list.
 - 2) Sewer service from the main to the right-of-way cleanout.
 - 3) Sewer line integrity test (mirror test) including proper alignment and grade.
 - 4) A TV inspection shall be performed on all gravity sanitary sewer lines (at City's expense).
 - 5) Sewer line pressure test (completed after installation of all cleanouts), per Section 02730 – *Sanitary Sewer*.
 - 6) Manhole integrity, invert (construction, etc.).
 - 7) Manhole vacuum test.
 - 8) Check for removal of debris from manholes and sewer mains.
 - 9) Testing logs shall be provided to the City's Construction Coordinator. The City's Construction Coordinator must be informed in advance of testing.

3. ROAD CONSTRUCTION INCLUDING CURB AND GUTTER, SIDEWALK, AND DRAINAGE FACILITIES

A. The following items must be inspected during and after installation of Road Construction and appurtenances for compliance with City Specifications and Standard Details:

- 1) All materials for acceptable make and model (i.e. catch basin grates and frames) in compliance with City of Lynchburg approved products list.
- 2) Curb and gutter shall be inspected for broken or cracked curb sections, uneven joints, grade misalignments, honeycombing, spalding, graffiti, grader blade scars, sealing of expansion/score joints, backfilling, etc.
- 3) Sidewalk, flumes, concrete ditches, steps, islands and driveways will be inspected for proper grade, cracks, uneven joints, scaring, graffiti, spalding, proper scoring patterns, sealing of expansion joints, surface abrasions, etc.
- 4) Concrete for air content and air entrainment (for exposed concrete only).
- 5) Test cylinders for each strength mix design shall be taken.
- 6) Asphalt density and thickness.
- 7) Median barriers, piers for stream crossings, retaining walls, and headwalls will be inspected for form marks, cracks, abrasions, honeycombing, graffiti, finish, etc.
- 8) Stone subgrade density and thickness.
- 9) Storm drainage lines installation.
 - a. All materials for acceptable make and model in compliance with City of Lynchburg approved products list.
 - b. Storm drainage line integrity test (mirror test) including proper alignment and grade.
 - c. A TV inspection shall be performed on all storm drainage lines (at City's expense).
 - d. Manhole, Drop Inlets and other miscellaneous structures integrity.
 - e. Check for removal of debris from manholes and storm drainage lines.
- 10) Erosion control structures removed and disturbed areas seeded and stabilized.

- 11) Ditches, swales, and streams stabilized and sediment removed.
- 12) Streets swept clean and debris removed from street and curb and gutter.
- 13) Where applicable, streets are to have pavement markings and signs placed in accordance with the plans and Standard Details.

4. ITEMS APPLICABLE TO ALL

A. **Record Drawings:** Record drawings are required to be submitted upon completion of the project prior to final acceptance. On record drawings, provide a minimum of three tie-downs to fixed permanent objects for all items to be located. Temporary structures or objects, such as traffic signs, pavement markings, valve markers, etc. are unsatisfactory as tie downs reference points.

B. Record drawings must include the following information:

1) Water Construction:

- a. Water Piping: Location of main, depth of line, type and size of line, air release valves, blowoffs, valves, tees, bends, sleeves, type of restraints, etc.
- b. Water Services: Locations of meter boxes, distances between meter boxes, depth of service line, length of service line from main to meter including size and type of service.
- c. Fire Hydrants: Location of fire hydrants, distance from main to valve, valve to fire hydrant, and height of fire hydrant.
- d. Tie-in to Existing System: Reference location of tie-in, sketch showing components including tees, nipple lengths, sleeves, valves, Megalugs, anchors, etc.

2) Sewer Construction

Sewer Piping: Location and bearings of sewer main, manholes, cleanouts, grades, manhole invert elevations, rim elevations, distances from one clean out to another, horizontal and vertical lengths for cleanouts, length of pipe from center of manhole to center of manhole.

3) Road Construction

Storm: Location of storm lines, manholes and inlets; grades; invert elevations; length of pipe runs.

C. **Inspection scheduling:** All inspections must be scheduled 24 hours prior to when inspection is needed and 48 hours in advance of when testing is needed. Inspections will be performed in the order received.

Every effort will be made to accommodate the time of request, however, this cannot be guaranteed.

- D. Upon completion of project, staging/storage areas shall be restored and portable toilet facilities removed from project.

5. WARRANTY

- A. **Warranty and Defects Guarantee:** Any work or materials not in accordance with these specifications will be rejected. All work that has been rejected or condemned shall be repaired or, if it cannot be satisfactorily repaired, shall be removed and replaced at the Contractor's expense. Materials not conforming to the requirements of these specifications shall be removed immediately from the site of the work and replaced with satisfactory material by the Contractor at his own expense.

Upon the failure of the Contractor to repair satisfactorily or to remove and replace, if so directed, rejected, unauthorized, or condemned work or materials immediately after receiving formal notice from the Engineer, the Owner may recover for such defective work or materials on the Contractor's bond or by action in court having proper jurisdiction over such matters, or may employ labor and equipment and satisfactorily repair or remove and replace such work and charge the cost of same to the Contractor, which cost will be deducted from any monies due him.

The approval of material and workmanship by the City Engineer, Construction Coordinator, or any employee of the City, does not under any consideration preclude the right of the City Engineer to reject all or any part of the same at any time previous to final payment, if found not to be in accordance with these specifications, nor does any inspection of work release the Contractor from any of his obligations to fulfill his Contract as herein specified and defective work and materials shall be made good or rejected notwithstanding such work and material that may have been previously accepted for payment.

- B. Upon the acceptance of facilities, utilities or streets for permanent maintenance, a one-year warranty for all improvements shall become effective. This warranty must be satisfactory to the City of Lynchburg. A bond in the amount of the total construction costs (to guarantee the correction of all defects in such facilities, utilities, or streets) shall be required on developments and projects which include public infrastructure (water, sewer, storm drainage, and roads).
- C. **Reference Point for Commencement of Warranty Period:** Upon completion of construction the developer shall request a final inspection. In addition to preceding requirements, the following items must be completed prior to final inspection:
 - 1) All punch list items,
 - 2) The provision of a set of acceptable record drawings (in accordance with Section 01000, *General Requirements* under project closeout),

- 3) Copies of asphalt density and core thickness test results and of concrete strength test results.
- 4) Operation and Maintenance manuals (in accordance with Section 01000, *General Requirements* under project closeout),
- 5) List of subcontractors, manufacturers and suppliers who participated in this project,
- 6) Statement of payment of taxes,
- 7) Affidavit of Payment of Debts and Claims
- 8) Affidavit of Release of Liens, and
- 9) The submission of the design engineer's water and/or sewer certifications,
- 10) All flushing and testing logs.

Upon completion of the above, a one-year warranty period shall commence. The City issued Acceptance Letter will state warranty date.

- D. For the purposes of this section, the term "defects" refers to any condition in publicly dedicated facilities, utilities or streets that requires the City to make repairs to such improvements over and above the normal amount of maintenance that they would require. If such defects appear, the warranty may be enforced regardless of whether the facilities, utilities, or streets were constructed in accordance with the requirements of the City of Lynchburg Manual of Specifications and Standard Details (see paragraph 5, above).
- E. **Latent Defects:** During the one-year warranty period the developer shall repair any latent defects that occur.
- F. **End of Warranty Period:** At the end of the one-year warranty period the developer shall request a cursory inspection. Upon successful completion of all warranty items, the developer shall be released from maintenance responsibilities for the warranted construction and construction bonds will be released.
- G. Warranty repairs to the following common problems shall be as follows:
 - 1) Trench failures in pavement shall be repaired in accordance with the requirements of Section 02220 – *Trenching, Backfilling & Compaction of Utilities* as well as per applicable **Standard Details 25.18** through **25.22**.
 - 2) If more than 3 trench failures occur within a longitudinal distance of 800 feet on any segment of a street, the City may require a 1-inch overlay once repairs have been completed.
 - 3) Cracks in sidewalk and/or curb and gutter shall be repaired by removing and repouring such sections as necessary;
 - 4) Concrete sidewalks, driveways, and curb and gutter, which fall below the specified strength, shall be removed and replaced as necessary.

- 5) Pavement, sidewalk or curb and gutter failures caused by latent subsurface problems shall be repaired in accordance with the recommendations of an approved Geotechnical engineer.
- 6) All water, sewer, storm sewer, drainage and street appurtenances impacted by the water and/or sewer construction shall be in acceptable condition and properly exposed (particularly water meters and sewer cleanouts);
- 7) Overseeding and reseeding may be required if an acceptable stand of grass has not been achieved by the end of the warranty period.
- 8) All other defects shall be corrected in accordance with the recommendations of the City Engineer or his/her representative;

If a developer fails to complete warranty items, future projects of the developer shall not be reviewed by the City Engineer. In addition, the City may take additional legal action against the developer.

3.5 RWS PLAN SUBMITTAL PROCEDURE

A. Purpose

Whenever infrastructure is constructed, replaced or enhanced that is or will become property of the City upon completion and acceptance, the developer must submit construction plans for review and approval by the Public Works Engineering Division.

B. General Requirements

1. All construction must adhere to the City of Lynchburg's Manual of Specifications and Standard Details, latest revision.
2. Eight (8) copies of RWS plans shall be submitted to the Office of the City Engineer at the following address:
City Engineer
City Hall
2nd Floor; Engineering Division
900 Church Street
Lynchburg, VA 24504
3. Submittal of RWS plans must be separate from TRC submittal. TRC submittals will not be accepted as full RWS plans.
4. All plans shall be prepared under the supervision of a licensed professional engineer and shall meet expected and accepted levels of engineering design. All plans submitted shall be complete and in accordance with acceptable standards of design and drafting. All incomplete or non-conforming plans will not be reviewed and will be returned via regular mail to the submitter.
5. A bond in the amount of the total construction costs (to guarantee the correction of all defects in such facilities, utilities or streets) shall be required on developments and projects which include construction, replacement or enhancement of public infrastructure (water, sewer, storm drainage and roads). The bond shall remain in effect for the duration of the warranty period. Bonds for residential subdivisions shall also meet the requirements of Chapter 24, Subdivisions, of the City Code.

C. Specific Requirements

The following attached checklist must be completed and submitted with the plans.

RWS PLAN SUBMITTAL CHECKLIST

1. ☐ Show drawing graphic scale.
2. ☐ All appropriate drawings shall have a north arrow.
3. ☐ Cover sheet shall have a vicinity map showing project location
4. ☐ Cover Sheet shall have index of drawings and a note to contact City Construction Coordinator and Miss Utility 48 hours in advance of any construction activity.
5. ☐ Cover Sheet shall have some variation of the following note: "All construction shall be performed in accordance with City Of Lynchburg Specifications and Standard Details."
6. ☐ Show and label all adjoining and adjacent property lines.
7. ☐ Show and label all adjoining and adjacent R-O-W lines.
8. ☐ Label all streets shown on drawings.
9. ☐ Label all adjoining property owners.
10. ☐ Show and label all proposed and existing city easements.
11. ☐ Show all adjoining property addresses or Tax Map No.s and City/county boundaries (if applicable).
12. ☐ Show and label all benchmarks and monuments.
13. ☐ Show 100-yr flood elevation.
14. ☐ Text and drawings shall be of appropriate scale for legibility and accurate depiction of piping locations and arrangements. (No 25 scale allowed)
15. ☐ All drawings shall be 24-inch by 36-inch (size D drawings). Oversize drawings will not be accepted.
16. ☐ City project number shall be displayed on all sheets.
17. ☐ Signature line for City Engineer shall be incorporated on all RWS plan and profile and detail sheets.
18. ☐ Signature line for Utilities Engineer shall be incorporated on all water and sewer plan and profile and detail sheets.
19. ☐ Show water meter locations and sizes.
20. ☐ Show on profile, water line pressure information, i.e. static pressure and test pressure.
21. ☐ Show and label information regarding water line tie-in, e.g. wet tap, tee, etc.
22. ☐ Label diameter of Water/Sewer/Storm lines – existing and proposed.
23. ☐ Label length of proposed Water/Sewer/Storm lines.
24. ☐ Label pipe material of Water/Sewer/Storm lines – existing and proposed.
25. ☐ Label all sewer manhole frame & covers as waterproof or standard.
26. ☐ Label slope of Sewer/Storm lines.
27. ☐ Show and label depth of water lines.
28. ☐ Show flow arrows on sewer lines.
29. ☐ Show all clean out locations.
30. ☐ Show horizontal control – bearings on lines/ coordinates on manholes.
31. ☐ Label angles on lines in and out of manholes.

32. _____ Show and detail all misc. storm appurtenances, e.g. headwalls, endwalls, retaining walls, flared end sections, and outlet protection.
33. _____ Show structure elevations and information for Storm and Sewer structures
 - _____ All invert ins, labeled with line size
 - _____ Invert out, labeled with line size
 - _____ Drop connection information
 - _____ Top/Rim elevation
 - _____ Structure numbers and stationing
34. _____ Label all water line appurtenances including fire hydrants, air release valves, bends, fittings, restraints, etc. complete with stationing.
35. _____ Submit plan and profile sheets for all proposed public water, sewer, and storm lines.
36. _____ Show all ditch and stream crossings on plans and profiles.
37. _____ Show all miscellaneous requirements for utility lines, e.g. slope anchors, thrust collars, encasements, etc.
38. _____ Show and label all utility crossings.
39. _____ Show any associated necessary abandonment of existing utilities.
40. _____ Submit plan and profile sheets for all proposed roads and road improvements. Show driveway profiles.
41. _____ Show all proposed curb and gutter and sidewalk.
42. _____ Label road grades in profiles.
43. _____ Submit cross sections for all proposed roads and road improvements.
44. _____ Show road horizontal and vertical curve data.
45. _____ Show sight distance for new roadways or driveways.
46. _____ Submit pavement marking plans, when applicable.
47. _____ Submit separate traffic signal plans, when applicable.
48. _____ Submit calculations for Water, Sewer, Storm, Roadway, E&S, etc. (See Water & Sewer Design Section of this Manual)
49. _____ Submit completed checklist.